

### **REMARKS**

Upon entry of the amendment, claims 1-40 will be pending. Claims 13-32 and 35-40 have been withdrawn. Claim 1 has been amended to recite that the solid gel matrix of the invention includes a "solid, separation gel" and to clarify that the SERS-enhancing nanoparticles are "contained in" the separation gel. The amendment is supported by claim 1 as originally filed and in the specification (see, for example, Figure 1), and, therefore, does not add new matter.

#### **Regarding the Restriction Requirement**

Pursuant to a telephone conversation with the Examiner on October 19, 2004, Applicants elect, with traverse, the invention of Group I, claims 1-12, 33, and 34.

The division of the claims of Group I from those of Groups II and III is traversed because, while gel matrix of claims 1-12 and 33-34 and the methods of producing a gel matrix of claims 13-15 (Group II) and methods of detecting an analyte of claims 16-32 are related, for example, as product and process of use, the Examiner has not established an alternative use for the gel matrix as required under MPEP § 806.05(h). It is stated in the Office communication that the gel matrix could be used in a materially different process than those of Groups II and III, but the Office communication is silent as to any particular alternative process envisioned by the Examiner. As such, Applicants submit that the Examiner has not met the requisite burden supporting division of the claims.

Applicants further submit that the gel matrix of the claims of Group I compared to the methods of producing a gel matrix of the Group II claims and the methods of detecting an analyte by utilizing a gel matrix of the Group III claims are so closely related that an examination of the methods of Groups II and III would be dependent upon an examination of the gel matrix of claim 1 (Group I) such as to make separate examinations of Groups I, II, and III duplicative. As such, it is submitted that it would not constitute an undue burden on the Examiner to search and examine the claims of Group I with those of Groups II and III, whereas the division of the claims and requirement to file a separate application to pursue the claims of

Groups II and III would constitute a waste of U.S. Patent and Trademark resources by requiring duplicative searches and examination. Accordingly, it is respectfully requested that the division of the claims be reconsidered and that the Examiner rejoin and examine the restricted claims together with elected claims 1-12 and 33-34.

Although Applicants elect the invention of Group I, claims 1-12, 33, and 34 for examination, Applicants acknowledge the Examiner's indication that once claims directed to the product (Group I) are elected, and a product claim is subsequently found allowable, withdrawn process claims that depend from or otherwise include all the limitations of the allowable product claim will be rejoined in accordance with MPEP §821.04. As such, claims withdrawn pursuant to the restriction requirement remain pending.

#### **Rejection Under 35 U.S.C. § 102**

The rejection of claims 1, 2, 4, 5, 7-11, 33, and 34 under 35 U.S.C. § 102(b), as being anticipated by Bruchez *et al.* (U.S. Patent Application Publication No. 2002/0155507), is respectfully traversed. It is initially noted that claim 1 has been amended. As such, the rejection will be addressed as it may apply to the amended claim.

A rejection of claims under 35 U.S.C. § 102 is improper unless each and every element of the claimed subject matter is found, either expressly or inherently described, in a single prior art reference (*Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987); MPEP § 2131). The currently claimed solid gel matrix is defined as including "a solid, separation gel" and "one or more SERS-enhancing nanoparticles contained in the separation gel". The SERS-enhancing nanoparticles contained in the separation gel further include "an attached probe that binds specifically to an analyte". Applicants submit that those elements of claim 1, and the corresponding dependent claims, are missing from the Bruchez *et al.* reference, thereby precluding a finding of anticipation.

Applicants point out that Bruchez fails to teach a separation gel, or gel suitable for separation of biomolecules within the gel, for example, by electrophoresis or magnetophoresis,

as recited in the current claims. In particular, the Examiner cites Bruchez, at paragraph 0196, as allegedly teaching a solid gel and one or more SERS-enhancing particles. The teachings of Bruchez, however, are limited to SCNCs ("semiconductor nanocrystal") contained within polymer beads or microspheres that are less than micrometer in size (see, for example, Bruchez at paragraph 0193), and the polymer beads containing SCNCs of Bruchez are designed and used for labeling cells for the purpose of detecting the labeled cell, for example, among a population of unlabeled cells (see, for example, Bruchez at paragraph 0016). A review of Bruchez, however, reveals absolutely no teaching as to a polymer bead, or a gel of any type, that is both suitable for separation of biomolecules by electrophoresis or magnetophoresis (e.g., a separation gel), and which contains one or more SERS-enhancing particles. Accordingly, Applicants submit that the cited reference does not anticipate the current claims because the solid polymer beads containing SCNCs taught by Bruchez and cited by the Examiner are not suitable for the separation of biomolecules and, therefore, are distinguishable from the solid gel matrix of the current claims, which includes a solid, separation gel and one or more SERS-enhancing nanoparticles contained in the separation gel.

Applicants further submit that the cited reference fails to teach a SERS-enhancing nanoparticle having an attached probe that binds specifically to an analyte, where the SERS-enhancing nanoparticle and attached probe are contained in a separation gel. It is stated in the Office action that Bruchez teaches, in one embodiment, a polymer bead containing SCNCs (paragraph 0196) and, in another embodiment, SCNCs conjugated with a specific molecule, e.g., a cell surface marker-specific antibody that has an affinity for a molecule on the surface of a cell (paragraphs 0110 and 0126). The cited reference, however, does not teach the combination of a SERS-enhancing nanoparticle and attached probe contained in a separation gel, such that the attached probe of the nanoparticle can specifically interact with a biomolecule contained in the separation gel. In fact, such a combination of the separate embodiments of Bruchez, it is submitted, would render the polymer beads of Bruchez inoperable for their intended purpose of detectably labeling cells, since a cell surface marker-specific antibody contained in the polymer bead would be unable to bind to the intended target cell surface-marker.

In summary, for the reasons set forth above, it is submitted that the cited reference does not teach each and every element of the claimed invention. Accordingly, removal of the rejection of claims 1, 2, 4, 5, 7-11, 33, and 34 under 35 U.S.C. § 102(b), as allegedly lacking novelty in light of Bruchez et al., is respectfully requested.

**Rejection Under 35 U.S.C. § 103**

The rejection of claims 3 and 6 under 35 U.S.C. § 103, as allegedly being unpatentable over Bruchez *et al.* (U.S. Patent Application Publication No. 2002/0155507) in view of Mirkin *et al.* (U.S. Patent Application Publication No. 2003/0211488), is respectfully traversed.

It is alleged in the Office action that it would have been obvious to a skilled artisan to include in the solid gel matrix of Bruchez, Raman active tags of an analog of adenine, or a fluorescent dye, as taught by Mirkin, in order to create distinguishable labels. As discussed above, however, Bruchez does not teach a solid gel matrix including a separation gel suitable for separation of biomolecules within the gel, or the combination of SERS-enhancing nanoparticles having an attached probe contained in a separation gel, as required by the current claims. Since Mirkin does not provide the teachings that are missing from Bruchez, and no additional references are provided in support of the present rejection, it is submitted that the failure of the cited references to teach or suggest a solid gel matrix as claimed remains for the reasons set forth above.

Accordingly, Applicants submit that the claimed invention would not have been obvious in view of the cited references and, therefore, respectfully request that the rejection of the claims under 35 U.S.C. § 103 be removed.

In re Application of:  
Su et al.  
Application No.: 10/750,301  
Filed: 12/30/2003  
Page 13

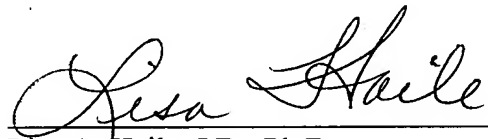
PATENT  
Atty. Docket No.: INTEL1240 (P16229)

In view of the amendments and the above remarks, it is submitted that the claims are in condition for allowance, and a notice to that effect is respectfully requested. The Examiner is invited to contact Applicants' representative if there are any questions relating to this application.

Please charge any additional fees, or make any credits, to Deposit Account No. 07-1896.

Respectfully submitted,

Date: March 16, 2005



Lisa A. Haile, J.D., Ph.D.  
Registration No. 38,347  
Telephone: (858) 677-1456  
Facsimile: (858) 677-1465

**USPTO CUSTOMER NUMBER 28213**  
DLA PIPER RUDNICK GRAY CARY US LLP  
ATTORNEYS FOR INTEL CORPORATION  
4365 Executive Drive, Suite 1100  
San Diego, California 92121-2133